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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/585,682	06/01/2000	Kei-Yu Ko	3526.2US (97-1136.2)	7481

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EXAMINER

CHU, CHRIS C

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 02/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/585,682

Applicant(s)

KO ET AL.

Examiner

Chris C. Chu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input type="checkbox"/> Other: |

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DETAILED ACTION

Response to Amendment

1. The amendment filed on December 3, 2001 has been received and entered in this office action.

Amend claims: 6, 10 and 13.

Response to Double Patenting

2. Applicant's request for reconsideration of the double patenting rejection of the last Office action is persuasive and, therefore, the double patenting of that action is withdrawn. Although the rejection based on double patenting of the 35 U.S.C. 101 is withdrawn, in order to maintain compact prosecution, no new ground of rejection is hereby established. However, an obvious type of double patenting rejection may be forthcoming.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1 ~ 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogawa et al.

Note Fig. 1C of Ogawa et al., where the reference shows a semiconductor device, comprising: a semiconductor substrate (2) including an active device region (see Fig. 1C); at least one conductive line (4) disposed upon said active device region, said at least one conductive line being flanked by sidewall spacers (5 and see Fig. 1C); an undoped silicon dioxide cap (9 and column 16, lines 61 ~ 62) disposed over and in contact with said at least one conductive line (see Fig. 1C); a passivation layer (11) over said undoped silicon dioxide cap (see Fig. 1C); and at least one contact aperture (see Fig. 1C) defined through said passivation layer and including at least one sidewall extending substantially perpendicularly relative to said semiconductor substrate, at least a portion of said at least one sidewall terminating at said undoped silicon dioxide cap (see Fig. 1C). Further, the mere fact that an undoped silicon dioxide cap, especially “undoped,” of Ogawa et al., the claim is anticipated thereby. Because, the reference does not specifically disclosed as “doped silicon dioxide cap,” therefore, Ogawa et al. meets the mere and bound of the claim.

As to the language on line 2 of claim 2, “a word line”, applicant should note that this is merely “result or function” language which cannot be relied upon to define over Ogawa et al., since Ogawa et al. discloses all of the claimed elements and their recited relationships. Moreover, the examiner will presume that the recited results are inherent in Ogawa et al., since all of the claimed elements and the relationships therebetween are met by Ogawa et al. If the recited result or function is not inherent in Ogawa et al., then this would mean that applicant has

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failed to recite one or more critical features of the present invention (i.e., a problem under 112, first paragraph).

Regarding claim 3, Ogawa et al. discloses said passivation layer (11 in Fig. 1C) comprises doped silicon dioxide (column 16, lines 14 ~ 16).

Regarding claim 4, Ogawa et al. discloses said passivation layer (11 in Fig. 1C) comprises borophosphosilicate glass (column 8, line 57), phosphosilicate glass, or borosilicate glass.

Regarding claim 5, Ogawa et al. discloses said undoped silicon dioxide cap (9 in Fig. 1C) is at least partially exposed through said at least one contact aperture (see Fig. 1C).

Regarding claim 6, note Fig. 1C of Ogawa et al., where the reference shows a semiconductor device, comprising: a semiconductor substrate (2); at least one undoped silicon oxide structure (9 and column 16, lines 61 ~ 62 and see Fig. 1C); and at least one doped silicon oxide structure (11) over said at least one undoped silicon oxide structure and having at least one sidewall substantially perpendicular to a plane of said semiconductor substrate, at least a portion of said at least one sidewall terminating at said at least one undoped silicon oxide structure (see Fig. 1C). Further, the mere fact that an undoped silicon dioxide cap, especially “undoped,” of Ogawa et al., the claim is anticipated thereby. Because, the reference does not specifically disclosed as “doped silicon dioxide cap,” therefore, Ogawa et al. meets the mere and bound of the claim.

Regarding claim 7, Ogawa et al. discloses said at least one sidewall comprises a sidewall of an aperture (see Fig. 1C).

Regarding claim 8, Ogawa et al. discloses said at least one sidewall at least partially defines an aperture through said doped silicon oxide structure (see Fig. 1C).

Regarding claim 9, Ogawa et al. discloses said at least one doped silicon oxide structure (9 in Fig. 1C) comprises borophosphosilicate glass (column 8, line 57), phosphosilicate glass, or borosilicate glass.

Regarding claim 10, Ogawa et al. discloses said at least one undoped silicon oxide structure (9 and column 16, lines 61 ~ 62) is at least partially located over a conductive structure (4, and see Fig. 1C).

Regarding claim 11, Ogawa et al. discloses said at least one undoped silicon oxide structure (9 and column 16, lines 61 ~ 62) comprises an insulative cap over a conductive line (see Fig. 1C).

Regarding claim 12, Ogawa et al. discloses said insulative cap is partially exposed through an aperture of said at least one doped silicon oxide structure defined by said at least one sidewall (see Fig. 1C).

Regarding claim 13, Ogawa et al. discloses said at least one undoped silicon oxide structure is at least partially exposed adjacent said at least one sidewall (see Fig. 1C).

Response to Arguments

5. Applicant's arguments filed on December 3, 2001 have been fully considered but they are not persuasive.

On page 7, paragraphs 2 and 3, applicant argues “[A]nother anisotropic etching process is then used ... through the silicon nitride layer 10. Col. 9, lines 45-49. The resulting structure is depicted in Fig. 10D of Ogawa, which shows a contact opening 7 that terminates at a sidewall spacer 5 of a transistor gate.” and “Ogawa does not depict or describe contact opening 7 as terminating at the upper insulating film 8 of the transistor gate ... Action. As is well known in the art, the cap of a transistor gate is the insulative structure positioned over the electrode thereof. As Ogawa describes a structure that includes a contact opening that terminates at a sidewall spacer of a transistor gate rather than at the cap thereof, it is respectfully submitted that Ogawa does not expressly or inherently describe ... as recited in claim 1.” Such arguments have been fully considered but not persuasive, since a reference is good for everything it teaches as long as the claim reads on the reference. Therefore, applicant must note that Fig. 1C of Ogawa et al. teaches the invention as claimed. The fact that Ogawa et al. discloses additional structure/step not claimed is irrelevant.

On page 8, paragraph 1, applicant argument against “Ogawa lacks any express or inherent description of a doped silicon oxide structure with a sidewall that terminates at an undoped silicon oxide structure.” The argument is not deemed to be persuasive since Ogawa et al. discloses “a doped silicon oxide structure (11 in Fig. 1C) with a sidewall that terminates at an undoped silicon oxide structure” in Fig. 1C of Ogawa et al.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris C. Chu whose telephone number is (703) 305-6194. The examiner can normally be reached on M-F (10:30 - 7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on (703) 308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

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Chris C. Chu
Examiner

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c.c.

February 11, 2002

A handwritten signature in black ink, appearing to read "Eddie Lee", with a large, sweeping initial "E".

EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800